DISEASE PROBLEMS IN GRAIN LEGUMES IN TANZANIA

P. N. Patel

Agricultural Research Institute, Ilonga

There is very little information on the distribution, relative importance and the extent of losses caused by diseases in grain legumes in Tanzania. The pathogens reported up to 1960 (Riley, CMI paper no. 75) are:

Cowpea

Bacterial spot:	*Pseudomonas syringae*
Leaf spot:	*Ascochyta phaseolorum*, *Cercospora cruenta*, *Septoria vignae*
Mildew:	*Erysiphe polygoni*
Rust:	*Uromyces vignae*
Mosaic:	Cowpea mosaic virus, Gardner

Soybean

Anthracnose:	*Glomerella glycines*
Leaf spot:	*Ascochyta phaseolorum*, *Cercospora kikuchii*
Root rot:	*Macrophomina phaseoli*

Pigeon pea

Leaf spot:	*Cercospora cajani*
Mildew:	*Leveillula taurica*
Root rot:	*Armillaria mellea*
Wilt:	*Fusarium lateritium* var *uncinatum*

Phaseolus aureus

Leaf spot:	*Cercospora cruenta*
Mildew:	*Erysiphae polygoni*
Rust:	*Uromyces appendiculatus*

Phaseolus vulgaris

Mosaic:	Bean yellow mosaic virus, Pierce, and Bean mosaic virus, Stewart and Reddick
Angular leaf spot:	Isariopsis griseola
Anthracnose:	Colletotrichum lindemuthianum
Ashy stem blight:	Macrophomina phaseoli
Damping-off:	Corticium solani
Grey mould:	Botrytis cinerea
Halo blight:	Pseudomonas phaseolicola
Leaf blotch:	Ascochyta phaseolorum
Leaf spot:	Mycosphaerella pinodes
Mildew:	Leveilluta taurica
Rust:	Uromyces appendiculatus
Sclerotinia disease:	Sclerotinia sclerotiotum
White mould:	Hyalodendron album
Wilt:	Fusarium sp., and pythium ultimum

Observations on the incidence of the disease in various cowpea trials at Ilonga (500 m elevation) during the first week of June, 1975 showed widespread and severe infection of blight (Cercospora cruenta) and mosaic diseases. Four distinct virus symptoms seen were (1) Golden yellow mosaic (leaves turning bright golden yellow seen in only 2-3 plants of TVu 1190 and Pale green; (2) yellow specks on leaves present only in Ife Brown; (3) green mottling and/or vein banding, present in many varieties; and (4) pronounced puckering of leaves and mosaic (present in Ife Brown). The virus symptoms in the Tanzania varieties SVS-3 and Emma were vein banding, rolling and vein clearing in leaves as reported for seed transmitted aphid-borne virus disease.

The other diseases seen in cowpea in varying severity were rust, bacterial blight, bacterial pustule, powdery mildew, leaf spot (Protomycopsis?), pod anthracnose (cause ?), Septoria vignae and a few others which require further identification. Presence of rust infection in TVu 1190 and TVu 201-1D at Ilonga indicates that race(s) of rust in Tanzania and in Ibadan may be different and require confirmation. Similar indications of pathogenic variability in Cercospora cruenta were also obtained. The variety SVS-3 which has performed very well at various locations in Tanzania is found susceptible to bacterial blight, bacterial pustule, Cercospora cruenta, rust and mosaic.

In the soybean trials at Ilonga and Gairo, the only disease widely prevalent was bacterial pustule, though the variety Bossier was free. Mosaic was seen only rarely. Ascochyta leaf spot is known to cause serious losses at higher elevations.

In the french bean varietal trial at Ilonga all the test lines were severely affected by bacterial blight (common or fuscous). Leaves, stem and pods were very badly infected. In some lines the plants were killed due to heavy infection on stem at cotyledonary joint. The epidemic appeared to have started from seed-borne inoculum. Since high degree of host resistance is not available, the practical control of this disease in the USA has been through production and distribution of disease-free seeds.

The other disease on french bean observed at Ilonga was angular leaf spot by Isariopsis griseola. It was also observed at Gairo (1500 m. elevation), where rust was commonly seen on the local variety. At higher elevations rust and anthracnose cause heavy losses.

No disease was observed on pigeon pea.

In the legume pathology program in Tanzania, the most inportant initial task appears to be assessing the economic importance of various diseases in the farmer's fields in different agroclimatic zones, followed by understanding of their epidemiology. Simultaneously, sources of multiple disease resistance identified at IITA and elsewhere should be tested in Tanzania to find out genotypes with broad based stable resistance.